Outline for Examiner Interview

Examiner Devang Patel (ph: 571-270-3636, fax: 571-370-4636)

Serial No. 10/596,057

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Docket No. 007035.00013

Dear Examiner Patel,

Below is a summary of our arguments and proposed claim amendments for use in our telephonic interview scheduled for **June 22, 2010, at 10:00am EST**. If you should have any questions or comments prior to the Interview, please contact me at 312-463-5443.

Best regards,

Greg Schlenz

Proposed Claim Amendments

1. (Currently Amended) Process for assembly of aluminum alloy plates comprising fluxless brazing under a controlled atmosphere consisting essentially of nitrogen and/or argon at a temperature of between 580°C and 620°C, and rapid cooling, and in which at least one of the plates consists essentially of:

(a) a core alloy with composition (% by weight):

Si 0.3-1.0; Fe<1.0; Cu 0.3-1.0; Mn 0.3-2.0; Mg 0.3-3.0; Zn<6.0; Ti<0.1; Zr<0.3; Cr<0.3; Ni<2.0; Co<2.0; Bi<0.5; Y<0.5; other elements <0.05 each and <0.15 total, remainder aluminum, and

(b) an aluminum brazing alloy coated as a single layer on at least one face of the core alloy, the aluminum brazing alloy ~~including~~ consisting essentially of, in % by weight, 4% to 15% of silicon, ~~and~~ 0.01% to 0.5% of at least one element selected from the group consisting of Ag, Be, Bi, Ce, La, Pb, Pd, Sb, Y or mischmetal; optionally at least one additive element selected from the group consisting of: Cu, Mg, and Zn; and incidental impurities.

14. (Currently Amended) A process for brazing aluminum alloy plates comprising:

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Serial Number 10/596,057

(a) coating one or more plates on at least one face with a single layer consisting of a cladding alloy ~~comprising~~ consisting essentially of, in % by weight, between 4% to 15% by weight silicon; ~~and~~ 0.01% to 0.5% by weight of at least one element selected from the group consisting of Ag, Be, Bi, Ce, La, Pb, Pd, Sb, Y or mischmetal; optionally at least one additive element selected from the group consisting of: Cu, Mg, and Zn; and incidental impurities;

(b) subjecting the one or more plates to fluxless brazing under a controlled atmosphere consisting essentially of nitrogen and/or argon at a temperature of between 580°C and 620°C, wherein at least one of the plates subjected to fluxless brazing consists essentially of a core alloy comprising between 0.3% and 1.0% by weight silicon, between 0.3% and 3.0% by weight magnesium, between 0.3% and 2.0% by weight manganese, and between 0.3% and 1.0% by weight copper, with the cladding alloy coated as the single layer on at least one face of the core alloy, and

(c) rapidly cooling the plates.

20. (Currently Amended) A brazing sheet suitable for fluxless brazing under a controlled atmosphere consisting essentially of nitrogen and/or argon at a temperature of between 580°C and 620°C, the brazing sheet consisting essentially of:

a core alloy comprising (% by weight):

Si 0.3-1.0; Fe<1.0; Cu 0.3-1.0; Mn 0.3-2.0; Mg 0.3-3.0; Zn<6.0; Ti<0.1; Zr<0.3; Cr<0.3; Ni<2.0; Co<2.0; Bi<0.5; Y<0.5; other elements <0.05 each and <0.15 total, remainder aluminum; and

an aluminum brazing alloy coating at least one face of the core alloy, wherein the brazing alloy occupies an entire thickness between the core alloy and a respective outer surface of the brazing sheet, the brazing alloy ~~comprising~~ consisting essentially of (% by weight):

4% to 15% of silicon; ~~and~~ 0.01% to 0.5% of at least one element selected from the group consisting of Ag, Be, Bi, Ce, La, Pb, Pd, Sb, Y or mischmetal; optionally at least one additive element selected from the group consisting of: Cu, Mg, and Zn; and incidental impurities.

Rejections Under 35 U.S.C. § 103

Applicant has included a summary of its arguments regarding the rejections under § 103:

- As described previously, the combination of the teachings of Miller and Dockus does not yield the claimed invention, because if Miller and Dockus were combined to create a sheet for fluxless controlled atmosphere brazing, the sheet would have an additional braze promoting layer.
- Childree discloses a sheet for fluxless CAB with a filler alloy that contains 0.0008% to 0.06% sodium (Na).
- Childree clearly teaches that the addition of sodium is the critical addition that makes the alloy suitable for fluxless CAB, particularly with core alloys that may contain more than 0.5% Mg (e.g. the core alloy of claim 1). See the following:
    - Par. 14: "The product is an aluminum filler metal that contains silicon and sodium."
    - Par. 24: "The addition of sodium alone or in combination with potassium and/or bismuth to the filler material allows increased levels of magnesium to be introduced into the core alloy…"
    - Par. 26: "Sodium is intentionally added to achieve the desired beneficial properties."
    - Par. 29: "The intentional addition of these elements [sodium alone or sodium combined with potassium and/or bismuth] allows brazing to occur without the need of a flux."
- As a result, Childree teaches away from using a brazing sheet that does not contain sodium in the filler layer, particularly if the core alloy may contain more than 0.5% Mg, and cannot be used to construct a brazing sheet that does not contain such a filler layer.
- Therefore, the combination of Childree with Miller and Dockus to create a sheet for fluxless CAB would require either:
    a) An additional braze promoting layer, as taught by Dockus, discussed previously, or
    b) A filler layer that contains sodium, as taught by Childree.

- The amended claim language of claims 1, 14, 19 and 20 exclude the use of a brazing sheet for fluxless CAB with a brazing alloy that contains any effective amount of sodium. Accordingly, the proposed combination cannot create a *prima facie* case of obviousness.
    - If the Examiner does not agree that the amendments to claims 1, 14, 19, and 20 exclude the use of sodium in the brazing layer of the brazing sheet, Applicant seeks the Examiner's advice regarding how to amend the claims to accomplish this objective.